

REMARKS

The Office Action mailed July 17, 2002, has been received and carefully reviewed. Reconsideration and withdrawal of the rejections of the claims of the above-identified application is respectfully requested. The amendments to the claims are fully supported by the specification and drawings as originally filed, for example at page 6, lines 8-14, and Figure 6.

Rejections Under 35 U.S.C. §112, Second Paragraph

Claim 8 was rejected as being indefinite. Claim 8 has been amended to depend from claim 7.

Rejections Under 35 U.S.C. §102(b)

Claims 1-21 are rejected as being anticipated by Banko (US 3,937,222). The Examiner asserts that Banko teaches every element of the claimed instrument. Applicants respectfully traverse the rejection.

Independent claim 1 has been amended to clarify the serpentoid configuration is through the cross-section of the blade, and to clarify the collecting element is on the leading end of the blade. Banko does not teach his instrument as having a blade that is serpentoid in cross section. Additionally, Banko does not teach his instrument having a blade with two cutting surfaces oriented such that the cutting surfaces are oriented for cutting when the instrument is rotated in a first direction, but when the instrument is rotated in the opposite direction, the cutting surfaces are not oriented for cutting. As shown in FIG. 12A of Banko, the "blade edges 100" are "formed on each side of a flute 101" (see column 4, lines 26-30). Thus, the blades of Banko's instrument would cut in both directions of rotation. Further, the instrument of Banko does not have a collecting element on the leading end of the blade, as is instantly claimed. Thus, Banko does not teach each and every element of independent claim 1 and claims dependent thereon.

The Examiner asserts that Banko teaches a collecting element with a peripheral surface that does not extend radially beyond the first and second cutting edges, and points to FIG. 3 of Banko for the teaching with respect to claim 5, and FIG. 5A with respect to claims 12 and 20. Applicants have carefully reviewed Banko, specifically FIGS. 3 and

5A, and have not found such teaching. Claims 5, 12 and 20 require the peripheral surface of the collecting element, not an interior surface as asserted by the Examiner, to not extend beyond the cutting edges. The peripheral surface of shield 45 of Banko clearly extends radially beyond the cutting edges as shown in FIGS 3-6B.

Regarding dependent claim 4 and independent claim 7, Banko fails to teach the claimed feature of a blade having a width less than a height and a diagonal dimension greater than the height. The Examiner points to FIG. 12B of Banko for this teaching. However, FIG. 12B of Banko, and all of the embodiments of Banko have substantially circular cross-sections (see FIGS. 6B-12B). Applicants submit that one of ordinary skill in the art would know that an object having a width less than a height and a diagonal dimension greater than the height would have an overall shape approaching a rectangle, not a circle. Applicants have studied FIG. 12B of Banko and are unable to determine how the instrument could be seen to anticipate instant claim 7. If this rejection is maintained, Applicants respectfully request the Examiner to point out in detail how the instrument shown in FIGS. 12A and 12B of Banko is interpreted as having the features and dimensional relationships required by instant claim 7. Applicants submit that Banko fails to teach each and every element of independent claim 7 and claims dependent thereon.

In support of the rejection of claims 9 and 17, the Examiner points to FIG. 12B and column 3, lines 7-21 of Banko for teaching two cutting edges with different orientations. Banko describes "blade edges 100" as being "formed on each side of a flute 101" (see column 4, lines 26-30). Therefore, the instrument of Banko has two parallel blade edges separated by a groove (101). Applicants submit that one blade edge would cut in when the instrument was rotated in a first direction, and the other blade edge would cut when the instrument was rotated in the opposite direction. Column 3, lines 7-21 of Banko describe the operation of the instrument, involving rotation of the cutter in a first direction, causing suction to bring the object to be cut into contact with the burr. Positioning of the shield is discussed with relation to exposure of the burr. However, Banko does not teach, suggest, or even mention rotating the instrument in the opposite direction, and therefore cannot be seen to teach the features of claims 9 and 17.

With respect to claim 14, the Examiner asserts that Banko teaches a shaft, a blade with an undulating configuration and first and second cutting edges, and a collecting element. However, claim 14 also requires the blade to have first and second sides, each with a concave region and a convex region, wherein the first side of the blade has the first cutting edge and the second side has the second cutting edge. Applicants respectfully submit that Banko fails to teach each and every element of claim 14. The embodiment of Banko shown in FIGS. 12A and 12B has a concave groove running in a spiral configuration, with blade edges at each side of the groove.

Banko does not teach a two-sided blade with each side having both concave and convex regions. Even if one were to consider the cylindrical instrument of Banko to have first and second "sides", each side would contain both of the cutting edges because the cutting edges spiral around the cylinder. The groove of Banko is concave, but there is no convex region associated with a blade, as is required by the instant claims. The Examiner asserts, with respect to claim 16, that the fluke edges 101 and blade edges 100 of Banko's FIG. 12B is a disclosure of a first concave region adjacent a second convex region. This comparison is not understood. The fluke 101 of Banko appears to be a groove cut into the instrument, with blade edges 100 being the edges of the groove. Thus, the blade edges are the groove edges. Additionally, as stated above, there are no convex regions shown in the blade of Banko.

For the reasons set forth above, Banko fails to teach each and every element of the claims, and therefore cannot be seen to anticipate the invention.

It is respectfully submitted that each of the presently pending claims are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' representative at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted,

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MARKED-UP VERSION TO SHOW CHANGES MADE

In the claims:

Please amend claims 1 and 8 to read as set forth below:

1. (Amended) A surgical instrument comprising:

- a proximal end spaced along a shaft from a distal end and a longitudinal axis passing therethrough;
- a working head at said distal end, said working head comprising:
 - a. a blade having a serpentoid configuration in cross-section and having a leading end and a trailing end spaced apart along said blade,
 - b. said blade having a first cutting surface extending from said leading end to said trailing end along a first edge of said blade and a second cutting surface extending from said leading end to said trailing end along a second edge of said blade, said first cutting surface and said second cutting surface arranged such that when said surgical instrument is rotated around said longitudinal axis in a first direction said first and second cutting surfaces are oriented for cutting and when said surgical instrument is rotated around said longitudinal axis in a second direction opposite to said first direction, said first and second cutting surfaces are not oriented for cutting; and

- c. a collecting element [at] on said leading end of said blade, said collecting element having a leading surface and a collecting surface to collect material cut by said blade.

- 8. (Amended) The surgical device according to claim [8] 7 further comprising a collecting element [at] on said leading end of said blade, said collecting element overlying a portion of said first concave surface and said second concave surface at said leading end of said blade.